**What is claimed is:**

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1. A receiver comprising a processor and an RF bridge coupled to the processor to receive a reference signal from the processor, the RF bridge including:

first and second frequency converters coupled to respective first and second antennas; and

a third frequency converter coupled to outputs of the first and second frequency converters.

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2. The receiver of claim 1, wherein:

the first and second frequency converters receive respective first and second signals from the respective first and second antennas; and

the third frequency converter hetrodynes signals from the first and second frequency converters to provide a signal that is characterized by a frequency difference modulated onto the reference signal, the frequency difference being a difference between a frequency of the first signal and a frequency of the second signal.

3. The receiver of claim 1, wherein the RF bridge further includes:

a frequency source coupled to the first frequency converter; and

a fourth frequency converter coupled to the reference signal and coupled between the frequency source and the second frequency converter.

C1 cont

4. The receiver of claim 3, wherein the RF bridge further includes a filter coupled between the fourth frequency converter and the second frequency converter, the filter providing a stop band at a highest frequency of a signal from the frequency source and a pass band at a shifted frequency that is a sum of a frequency of the reference signal and a lowest frequency from the frequency source.

5. The receiver of claim 1, further comprising:

an up converter coupled between the processor and the RF bridge to frequency translate the reference signal by a predetermined frequency into an intermediate reference signal coupled to the RF bridge; and

a down converter coupled between the RF bridge and the processor to frequency translate an information signal from the RF bridge by the predetermined frequency into a shifted information signal.

C1 cont

6. A receiver comprising a processor and an RF bridge coupled to the processor to receive a reference signal from the processor, the RF bridge including:

first and second frequency converters coupled to respective first and second antennas;

a frequency source coupled to the first frequency converter; and

a third frequency converter coupled to the reference signal and coupled between the frequency source and the second frequency converter.

7. The receiver of claim 6, wherein the RF bridge further includes a fourth frequency converter coupled to the first and second frequency converters.

8. The receiver of claim 6, wherein the RF bridge further includes a filter coupled between the third frequency converter and the second frequency converter, the filter providing a stop band at a highest frequency of a signal from the frequency source and a pass band at a shifted frequency that is a sum of a frequency of the reference signal and a lowest frequency from the frequency source.

9. A receiver comprising an RF bridge and a processor coupled to the RF bridge to receive an information signal from the RF bridge, the processor including:

a digital frequency source to generate a reference signal based on a signal from a clock source, the reference signal being coupled to the RF bridge; and

circuitry to detect a frequency difference from the information signal based on the signal from the clock source.

C1 cont'

10. The receiver of claim 9, wherein the circuitry to detect includes:

a first Fourier transformer having a first center frequency; and

a second Fourier transformer having a second center frequency, the first center frequency being different than the second center frequency.

11. The receiver of claim 10, wherein the circuitry to detect further includes a digital frequency generator that generates:

a first digital signal at the first center frequency coupled to the first Fourier transformer; and

a second digital signal at the second center frequency coupled to the second Fourier transformer.

12. The receiver of claim 10, wherein the circuitry to detect further includes a frequency discriminator coupled to the first and second Fourier transformers.

13. The receiver of claim 10, wherein:

the circuitry to detect further includes a frequency converter coupled between the information signal and inputs to the first and second Fourier transformers; and

the digital frequency generator further generates a third digital signal coupled to the frequency converter, the third digital signal being generated at a frequency to cause the frequency converter to shift a frequency of the information signal to a frequency between the first and second center frequencies.

14. The receiver of claim 9, wherein the RF bridge includes:

first and second RF frequency converters coupled to respective first and second antennas; and

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a third RF frequency converter coupled to outputs of the first and second RF frequency converters.

15. The receiver of claim 14, wherein:

the first and second RF frequency converters receive respective first and second signals from the respective first and second antennas; and

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the third RF frequency converter hetrodynes signals from the first and second RF frequency converters to provide a signal that is characterized by a frequency difference modulated onto the reference signal, the frequency difference being a difference between a frequency of the first signal and a frequency of the second signal.

16. A method comprising steps of:

capturing a frequency difference that is present at first and second antennas;

producing an information signal onto which the frequency difference has been modulated; and

analyzing the information signal to determine the frequency difference.

17. The method of claim 16, wherein the step of analyzing includes:

forming a first Fourier transform of the information signal at a first center frequency;

forming a second Fourier transform of the information signal at a second center frequency, the second center frequency being different than the first center frequency.

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18. The method of claim 17, wherein:

the steps of forming the first and second Fourier transforms form the transforms over an integration interval; and

the integration interval is inversely proportional to a difference between the first center frequency and the second center frequency.

19. The method of claim 18, wherein the step of analyzing determines the frequency difference to be $\frac{\pi}{2T}\frac{(A-B)}{(A+B)}$, where T is the integration interval, A is the first Fourier transform and B is the second Fourier transform.

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20. The method of claim 17, further comprising a step of determining a range between an emitter generating the signal and a point between the first and second antennas.

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